

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. Additions are identified by underlining. Deletions are indicated by ~~strikethrough~~ or [brackets].

Claim 1 (Currently amended): A method for ~~preserving layer 2 address information or information replacing a layer 2 address of a client device which sourced a virtual private network packet, the method comprising:~~

- a) receiving a packet having a layer 2 destination address and a first layer 3 destination address at a port;
- b) modifying the packet by replacing the layer 2 destination address with context information based on the port;
- [a)]c) determining a second new layer 3 destination address based on at least a portion of [a] the first layer 3 destination address of the virtual private network packet; and
- [b)]d) encapsulating the modified virtual private network packet with a layer 3 source address, the second new layer 3 destination address determined, a layer 2 source address and a layer 2 destination address.

Claim 2 (Currently amended): The method of claim 1 further comprising encapsulating the modified packet with a layer 3 source address, wherein the layer 3 source address corresponds to the layer 3 address of an ingress access router.

Claim 3 (Currently amended): The method of claim 1 wherein the second new layer 3 destination address determined corresponds to a the layer 3 address of an egress access router.

Claim 4 (Currently amended): A method for ~~forwarding a virtual private network packet in which layer 2 address information or information replacing a layer 2 address of a device has been preserved, in which layer 3 destination address information has been preserved and which includes a second layer 3 destination address which corresponds to an egress access router, the method comprising:~~

a) receiving an encapsulated packet having context information, a first layer 3 destination address, and a second layer 3 destination address, the context information indicating a first network;

[a]]b) creating a de-encapsulated packet de-encapsulating the virtual private network packet by removing the second layer 3 destination address ~~from the encapsulated packet;~~

[b]]c) determining a new destination layer 2 address based on (i) at least a portion of the ~~preserved~~ first layer 3 destination address information, and (ii) at least a portion of the ~~layer 2 address information or the information replacing the layer 2 address of the device context information~~; and

[c]]d) replacing a destination layer 2 address ~~the context information~~ with the determined new destination layer 2 address ~~determined in the de-encapsulated packet;~~ and

(e) sending the packet to a second network;

wherein the first network and second network share a layer 2 address space containing the determined destination layer 2 address.

Claims 5-18 (canceled)

Claim 19: (New) The method of claim 1, wherein the context information includes at least one of a logical port identifier, customer identifier or a VPN identifier.

Claim 20: (New) The method of claim 1, wherein the context information includes at least one of a quality of service identifier or a class of service identifier.

Claim 21: (New) The method of claim 4, wherein the encapsulated packet further includes a layer 3 source address corresponding to an ingress access router.

Claim 22: (New) The method of claim 4, wherein the second layer 3 destination address corresponds to a layer 3 address of an egress access router.

Claim 23: (New) The method of claim 4, wherein the context information includes at least one of a logical port identifier, customer identifier or a VPN identifier.

Claim 24: (New) The method of claim 4, wherein the context information includes at least one of a quality of service identifier or a class of service identifier.

Claim 25: (New) A method, comprising:

receiving a packet from a first port, the packet having a layer two destination address and a layer 3 destination address;
modifying the packet by adding context information based on the first port;
forwarding the modified packet through a second port;
wherein the context information includes at least one of a logical port identifier, a customer identifier, VPN identifier, a class of service identifier or a quality of service identifier.

Claim 26: (New) A method comprising:

receiving a packet from a first port, the packet having context information;
modifying the packet by removing the context information;
determining a second port through which to forward the modified packet based on the context information;
forwarding the modified packet through the second port;
wherein the context information includes at least one of a logical port identifier, a customer identifier, VPN identifier, a class of service identifier or a quality of service identifier.